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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,432	12/31/2003	Stephen F. Smith	UBAT1110	1772

38396 7590 06/28/2006

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EXAMINER	
BURD, KEVIN MICHAEL	

ART UNIT	PAPER NUMBER
2611	

DATE MAILED: 06/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/750,432	SMITH ET AL.	
	Examiner	Art Unit	
	Kevin M. Burd	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 April 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4,6-12,14-19,33-46,49,51-59,61-66 and 68-74* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,6-12,14-19,33-46,49,51-59,61-66 and 68-74* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. This office action, in response to the amendment filed 4/18/2006, is a final office action.

Response to Arguments

2. Applicant's arguments with respect to claims 1-74 have been considered but are moot in view of the new grounds of rejection.

Claim Objections

3. Claims 12, 14, 59, 61, 70 and 71 are objected to because of the following informalities: Claims 12, 59 and 70 claim a computer program but do not state the computer program is embodied on a storage medium. Claims 14, 61 and 71 appear to be indefinite since it is unclear what the electronic medium is. Is the electronic medium an electromagnetic signal? Is it a memory? Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 15-19, 37-44, 46, 62-66, 73 and 74 are rejected under 35 U.S.C. 102(b) as being anticipated by Kostreski et al (US 6,005,605).

Regarding claim 15, Kostreski discloses an apparatus comprising a transmitter for generating a spread spectrum signal comprising modulating a signal by utilizing a pseudo random code generator to control a fast frequency hopping synthesizer. The components are controlled by a clock and the output signal is modulated. Information is added to the spreading code before modulation (column 12, lines 44-46). This is used in fast frequency hopping CDMA systems (column 12, lines 58-66). Each code establishes a pseudo random pattern, which is known to both the transmitter and receiver (column 13, lines 55-58).

Regarding claims 16-19, Kostreski discloses the power amplifiers in figure 6 to control the signal amplitude output from the transmitter.

Regarding claims 37, 41-44 and 46, Kostreski discloses an apparatus comprising a transmitter for generating a spread spectrum signal comprising modulating a signal by utilizing a pseudo random code generator to control a fast frequency hopping synthesizer. The components are controlled by a clock and the output signal is modulated. Information is added to the spreading code before modulation (column 12, lines 44-46). This is used in fast frequency hopping CDMA systems (column 12, lines 58-66). Each code establishes a pseudo random pattern, which is known to both the transmitter and receiver (column 13, lines 55-58). Kostreski discloses the splitter shown in figure 6.

Regarding claims 37-40, Kostreski discloses the power amplifiers in figure 6 to control the signal amplitude output from the transmitter.

Regarding claims 49, 53, 59 and 61, Kostreski discloses a method of generating a spread spectrum signal comprising modulating a signal by utilizing a pseudo random code generator to control a fast frequency hopping synthesizer. Information is added to the spreading code before modulation (column 12, lines 44-46). This is used in fast frequency hopping CDMA systems (column 12, lines 58-66). Each code establishes a pseudo random pattern, which is known to both the transmitter and receiver (column 13, lines 55-58). Kostreski further discloses the use of time-frequency hoping having times of transmission that are regulated by a code sequence (column 12, lines 34-39).

Regarding claim 54, the frequency hoping comprises chirp modulation in which a carrier is swept over a wide band during a given pulse interval (column 12, lines 40-42).

Regarding claim 55, the multi-path immunity is increased when frequency hopping occurs to eliminate interference. This is the reassigning of the bit pattern relationship according to a set frequency-hopping table or sequence.

Regarding claims 62, 66, Kostreski discloses an apparatus comprising a transmitter for generating a spread spectrum signal comprising modulating a signal by utilizing a pseudo random code generator to control a fast frequency hopping synthesizer. The components are controlled by a clock and the output signal is modulated. Information is added to the spreading code before modulation (column 12, lines 44-46). This is used in fast frequency hopping CDMA systems (column 12, lines 58-66). Each code establishes a pseudo random pattern, which is known to both the transmitter and receiver (column 13, lines 55-58).

Regarding claims 63-65, Kostreski discloses the power amplifiers in figure 6 to control the signal amplitude output from the transmitter.

Regarding claims 73 and 74, Kostreski discloses using fast frequency hopping CDMA system (column 12, lines 58-66).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 6-8, 12, 14 and 51 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kostreski et al (US 6,005,605) in view of Clark et al (US 2002/0168937).

Regarding claims 1, 12 and 14, Kostreski discloses a method of generating a spread spectrum signal comprising modulating a signal by utilizing a pseudo random code generator to control a fast frequency hopping synthesizer. Information is added to the spreading code before modulation (column 12, lines 44-46). This is used in fast frequency hopping CDMA systems (column 12, lines 58-66). Each code establishes a pseudo random pattern, which is known to both the transmitter and receiver (column 13, lines 55-58). Kostreski does not disclose modulating a direct sequence spread spectrum signal by fast frequency hopping the direct sequence signal. However, Clark discloses combining frequency hopping spread spectrum and direct sequence spread spectrum to

facilitate communication with or among a plurality of nodes (paragraph 0010). This allows the system to achieve an improved level of noise immunity (paragraph 0010). For this reason, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the capabilities of Clark into the method of Kostreski.

Regarding claim 6, the frequency hoping comprises chirp modulation in which a carrier is swept over a wide band during a given pulse interval (column 12, lines 40-42).

Regarding claim 7, Kostreski further discloses the use of time-frequency hoping having times of transmission that are regulated by a code sequence (column 12, lines 34-39).

Regarding claim 8, the multi-path immunity is increased when frequency hopping occurs to eliminate interference. This is the reassigning of the bit pattern relationship according to a set frequency-hopping table or sequence.

Regarding claim 51, Kostreski discloses the method stated above in paragraph 4. Kostreski does not disclose modulating a direct sequence spread spectrum signal by fast frequency hopping the direct sequence signal. However, Clark discloses combining frequency hopping spread spectrum and direct sequence spread spectrum to facilitate communication with or among a plurality of nodes (paragraph 0010). This allows the system to achieve an improved level of noise immunity (paragraph 0010). For this reason, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the capabilities of Clark into the method of Kostreski.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kostreski et al (US 6,005,605) in view of Clark et al (US 2002/0168937) further in view of Swanke (US 5,521,533).

Regarding claim 4, the combination of Kostreski and Clark discloses the method stated above in paragraph 5. The combination does not disclose directly synthesizing a digital signal. Swanke discloses the use of direct digital synthesizers in frequency hopping systems (figure 1). The synthesizers receive synchronized frequency hopping control signals from a frequency spread sequencer. The mixer yields a constant resultant frequency output signal of greatly suppressed signal distortion during the hopping sequence (column 2, lines 25-31). For this reason, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the direct digital synthesizer of Swanke into the combination of Kostreski and Clark.

7. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kostreski et al (US 6,005,605) in view of Clark et al (US 2002/0168937) further in view of Barrett (US 5,592,177).

Regarding claim 9, the combination of Kostreski and Clark discloses the method stated above in paragraph 5. The combination does not disclose modulating a polarization of the signal. Barrett discloses combining polarization-rotation modulation techniques with direct sequence spread systems as with conventional frequency hopping techniques in column 3, lines 15-29). Therefore, the polarization-rotational modulation technique is more spread, or covert then the prior art (column 3, lines 28-

29). This enables the signals to be more resistant to noise and interference. For this reason, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the polarization-rotation modulation of Barrett into the combination of Kostreski and Clark.

Regarding claim 10, Barrett further discloses modulations of the emitted signals occur between signals from two orthogonally polarized emit/receive antennas (column 1, lines 56-67).

8. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kostreski et al (US 6,005,605) in view of Clark et al (US 2002/0168937) further in view of Becker (6,726,099).

Regarding claim 11, the combination of Kostreski and Clark discloses the method stated above in paragraph 5. The combination does not disclose the method comprising transmitting the signal to a radio frequency tag and receiving information from the radio tag. Becker discloses transmitting an RFID tag and receiving information from the tag (figures 1 and 2). It is known to attach RFID tags to articles to be monitored (column 1, lines 41-55). This can be used for security or for inventory management. For these reasons, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the RFID transmission and reception system of Becker into the combination of Kostreski and Clark.

9. Claims 33, 34, 36, 68 and 70-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kostreski et al (US 6,005,605) in view of Clark et al (US 2002/0168937) further in view of Barrett (US 5,592,177).

Regarding claims 33, 70 and 71, Kostreski discloses a method of generating a spread spectrum signal comprising modulating a signal by utilizing a pseudo random code generator to control a fast frequency hopping synthesizer. Information is added to the spreading code before modulation (column 12, lines 44-46). This is used in fast frequency hopping CDMA systems (column 12, lines 58-66). Each code establishes a pseudo random pattern, which is known to both the transmitter and receiver (column 13, lines 55-58). Kostreski does not disclose modulating a direct sequence spread spectrum signal by fast frequency hopping the direct sequence signal. However, Clark discloses combining frequency hopping spread spectrum and direct sequence spread spectrum to facilitate communication with or among a plurality of nodes (paragraph 0010). This allows the system to achieve an improved level of noise immunity (paragraph 0010). For this reason, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the capabilities of Clark into the method of Kostreski. The combination does not disclose modulating a polarization of the signal. Barrett discloses combining polarization-rotation modulation techniques with direct sequence spread systems as with conventional frequency hopping techniques in column 3, lines 15-29). Therefore, the polarization-rotational modulation technique is more spread, or covert then the prior art (column 3, lines 28-29). This enables the signals to be more resistant to noise and interference. For this reason, it would have been obvious for one of

ordinary skill in the art at the time of the invention to combine the polarization-rotation modulation of Barrett into the combination of Kostreski and Clark.

Regarding claim 34, Kostreski discloses using fast frequency hopping in column 12.

Regarding claim 36, Kostreski further discloses the use of time-frequency hoping having times of transmission that are regulated by a code sequence (column 12, lines 34-39).

Regarding claim 68, Barrett further discloses modulations of the emitted signals occur between signals from two orthogonally polarized emit/receive antennas (column 1, lines 56-67).

Regarding claim 72, the multi-path immunity is increased when frequency hopping occurs to eliminate interference. This is the reassigning of the bit pattern relationship according to a set frequency-hopping table or sequence.

10. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kostreski et al (US 6,005,605) in view of Clark et al (US 2002/0168937) further in view of Barrett (US 5,592,177) further in view of Swanke (US 5,521,533).

Regarding claim 35, the combination of Kostreski and Clark discloses the method stated above in paragraph 9. The combination does not disclose directly synthesizing a digital signal. Swanke discloses the use of direct digital synthesizers in frequency hopping systems (figure 1). The synthesizers receive synchronized frequency hopping control signals from a frequency spread sequencer. The mixer yields a constant

resultant frequency output signal of greatly suppressed signal distortion during the hopping sequence (column 2, lines 25-31). For this reason, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the direct digital synthesizer of Swanke into the combination of Kostreski and Clark.

11. Claims 45 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kostreski et al (US 6,005,605) in view of Becker (6,726,099).

Regarding claim 45, Kostreski discloses the apparatus stated above in paragraph 4. Kostreski does not disclose the system comprising transmitting the signal to a radio frequency tag and receiving information from the radio tag. Becker discloses transmitting an RFID tag and receiving information from the tag (figures 1 and 2). It is known to attach RFID tags to articles to be monitored (column 1, lines 41-55). This can be used for security or for inventory management. For these reasons, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the RFID transmission and reception system of Becker into the system of Kostreski.

Regarding claim 58, Kostreski discloses the method stated above in paragraph 4. Kostreski does not disclose the method comprising transmitting the signal to a radio frequency tag and receiving information from the radio tag. Becker discloses transmitting an RFID tag and receiving information from the tag (figures 1 and 2). It is known to attach RFID tags to articles to be monitored (column 1, lines 41-55). This can be used for security or for inventory management. For these reasons, it would have

been obvious for one of ordinary skill in the art at the time of the invention to combine the RFID transmission and reception system of Becker into the method of Kostreski.

12. Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kostreski et al (US 6,005,605) in view of Swanke (US 5,521,533).

Regarding claim 52, Kostreski discloses the method stated above in paragraph 4. Kostreski does not disclose directly synthesizing a digital signal. Swanke discloses the use of direct digital synthesizers in frequency hopping systems (figure 1). The synthesizers receive synchronized frequency hopping control signals from a frequency spread sequencer. The mixer yields a constant resultant frequency output signal of greatly suppressed signal distortion during the hopping sequence (column 2, lines 25-31). For this reason, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the direct digital synthesizer of Swanke into the method of Kostreski.

13. Claims 56 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kostreski et al (US 6,005,605) in view of Barrett (US 5,592,177).

Regarding claim 56, Kostreski discloses the method stated above in paragraph 4. Kostreski does not disclose modulating a polarization of the signal. Barrett discloses combining polarization-rotation modulation techniques with direct sequence spread systems as with conventional frequency hopping techniques in column 3, lines 15-29). Therefore, the polarization-rotational modulation technique is more spread, or covert

then the prior art (column 3, lines 28-29). This enables the signals to be more resistant to noise and interference. For this reason, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the polarization-rotation modulation of Barrett into the method of Kostreski.

Regarding claim 57, Barrett further discloses modulations of the emitted signals occur between signals from two orthogonally polarized emit/receive antennas (column 1, lines 56-67).

14. Claim 69 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kostreski et al (US 6,005,605) in view of Clark et al (US 2002/0168937) further in view of Barrett (US 5,592,177) further in view of Becker (6,726,099).

Regarding claim 11, the combination of Kostreski, Clark and Barrett discloses the method stated above in paragraph 9. The combination does not disclose the method comprising transmitting the signal to a radio frequency tag and receiving information from the radio tag. Becker discloses transmitting an RFID tag and receiving information from the tag (figures 1 and 2). It is known to attach RFID tags to articles to be monitored (column 1, lines 41-55). This can be used for security or for inventory management. For these reasons, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the RFID transmission and reception system of Becker into the combination of Kostreski, Clark and Barrett.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin M. Burd
6/26/2006

KEVIN BURD
PRIMARY EXAMINER